

What Is Claimed Is:

1. A fuel injector (1) for the injection of water, in particular into the gas flow of fuel cells, comprising a valve needle (19) having at its spray-discharge-side end a valve-closure member (21), which cooperates with a valve-seat surface (20) formed on a valve-seat member (29) a sealing seat; and at least one spray-discharge orifice (7) provided downstream from the sealing seat,

wherein at least a portion of the surfaces of the fuel injector (1) that come into contact with water are coated by a corrosion-inhibiting and/or friction-reducing coating (33).

2. The fuel injector as recited in Claim 1, wherein the corrosion-inhibiting and/or friction-reducing coating (33) is made up of one or a plurality of layer(s).

3. The fuel injector as recited in one of the preceding claims, wherein the joints, in the particular welded seams (31) that come into contact with water are coated by the corrosion-inhibiting and/or friction-reducing coating (33).

4. The fuel injector as recited in one of the preceding claims, wherein the guide and sliding surfaces (11, 22) that come into contact with water are at least partially coated by the corrosion-inhibiting and/or friction-reducing coating (33).

5. The fuel injector as recited in one of the preceding claims, wherein the corrosion-inhibiting and/or friction-reducing coating (33) is applied with the aid of a galvanic method.

6. The fuel injector as recited in one of Claims 1 through 4, wherein the corrosion-inhibiting and/or friction-reducing coating (33) is applied by a physical method, in particular by a physical vapor deposition method.

7. The fuel injector as recited in one of Claims 1 through 4, wherein the corrosion-inhibiting and/or friction-reducing coating (33) is applied by a chemical method, in particular by a chemical vapor deposition method.

8. The fuel injector as recited in one of the preceding claims, wherein the corrosion-inhibiting and/or friction-reducing coating (33) is made of lubricating varnish on Teflon basis, from materials on sulphur basis, in particular molybden sulphide MoS_2 , of carbon, xylan, titanium nitride TiN, and/or carbon mixtures, in particular PTEE.

9. The fuel injector (1), in particular for the injection of water into the gas flow of fuel cells, comprising a valve needle (19) which, at its spray-discharge-side end, has a spherical valve-closure member (21), which cooperates with a valve-seat surface (20) formed on a valve-seat member (29) a sealing seat; and at least one spray-discharge orifice (7) provided downstream from the sealing seat, wherein the valve-closure member (21) has an annular groove (13) in the region of the sealing seat, and an annular elastic sealing ring (14) is introduced in the groove (13).

10. The fuel injector as recited in Claim 9, wherein the annular sealing ring (14) is at least partly made of an elastomer.

11. A method for manufacturing a fuel injector (1), in particular for the injection of water into the gas flow of fuel cells, comprising a valve needle (19) having at its spray-discharge-side end a valve-closure member (21), which cooperates with a valve-seat surface (20) formed on a valve-seat member (29) a sealing seat; and a spray-discharge orifice (7) provided downstream from the sealing seat, including the following method steps:

- producing a joint (31) between valve needle (19) and valve-closure member (21);
- positioning the joined components (19, 21);
- assigning a metering device (24);
- applying material which forms a corrosion-inhibiting and/or friction-reducing coating (33) onto the joint (31) by means of the metering device (24).

12. The method as recited in Claim 11, wherein the joint (31) is produced by welding or soldering.

13. The method as recited in Claim 11 or 12,

wherein the material forming the corrosion-inhibiting and/or friction-reducing coating (33) is applied on the joint (31) via a canula (24) with the aid of the metering device.

14. The method as recited in Claim 13, wherein the canula (24) is brought to the joint (31) lying across from the valve-closure member (21) through the valve needle (19), designed as sleeve, through an opening (32).

15. The method as recited in one of Claims 11 through 14, wherein the valve needle (19) and the valve-closure member (21) are centrifuged for aftertreatment, the valve-closure member (21) being disposed on the outside and the valve needle (19) on the inside.

16. The method as recited in Claim 15, wherein the aftertreatment is a thermal treatment, in particular a thermal evacuation.